Term 3 Content for Maths Literacy

Sponsored by Sharp and SMD Technologies

Agenda

- Sharpies
- Basics
- Topics
  - Finance
  - Measurement
  - Maps, Plans and Representations
  - Tariff Systems
  - Probability

Sharpies

- A reward program just for teachers
- Earn points for attending this webinar.
- Exchange your points for gifts.
- Sign up – link
- Tell all your friends - link

Free Downloads and Resources

- **Download the simulator**
  - Link
- Download Geogebra
  - Link
- Worksheets
  - www.mathsatsharp.co.za
  - www.e-classroom.co.za
  - www.math-drills.com
  - https://www.mathx.net/
  - https://www.worksheetworks.com/ (one of my favourites for younger grades and fully customisable)
  - https://www.mathwarehouse.com/sheets/ (FET mostly)
- ATP documents (link)
- My maths blog – www.themathsjourney.com
- Telegram support group

Calculator Basics

- Turn the calculator on
- 2nd Function – used to activate orange functions
  - Turn the calculator off by pressing 2nd F and ON
- ALPHA – used to activate teal functions
- Mode – change to different modes
- BS – backspace – to delete something.
- Change – change between mixed, improper and decimal answers.
- Equals – to find an answer or used as enter.

Modes

- Press
- 0: Normal
  - Fractions, integers, probability, trigonometry and much more
- 1: Stat
  - Single data, linear regression and more
- 2: Table
  - Functions but can also be used for teaching finance
- 3: Drill
  - Mental maths fun!

Finance

Grade 10 and 11

Theory

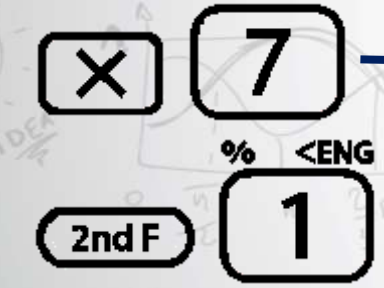
- Income
  - Money coming in
- Expenditure
  - Money being spent
- Fixed
  - the same amount at the same time every month
- Variable
  - a different amount and maybe not at the same time.
- Budget
  - Shows us the incoming money and outgoing expenses
  - Helps us to plan ahead

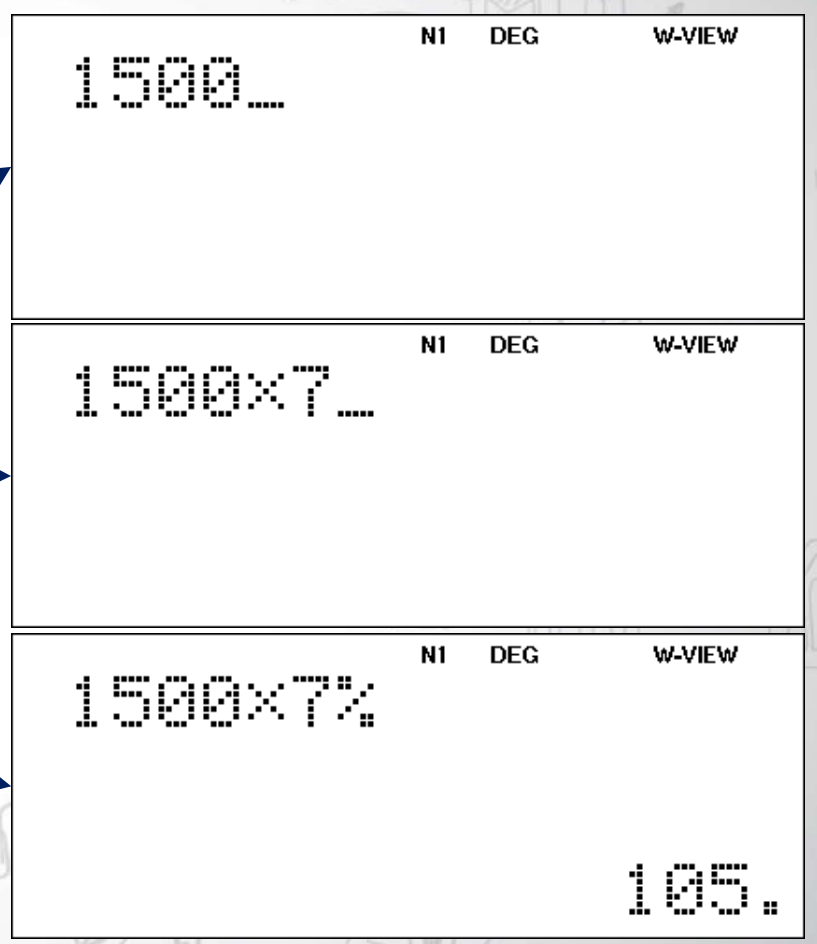
Interest

- Need to be able to calculate simple and compound interest manually
- Simple interest
  - Is adding the same amount every time period
- Compound interest
  - Add the same percentage to the amount every time period.

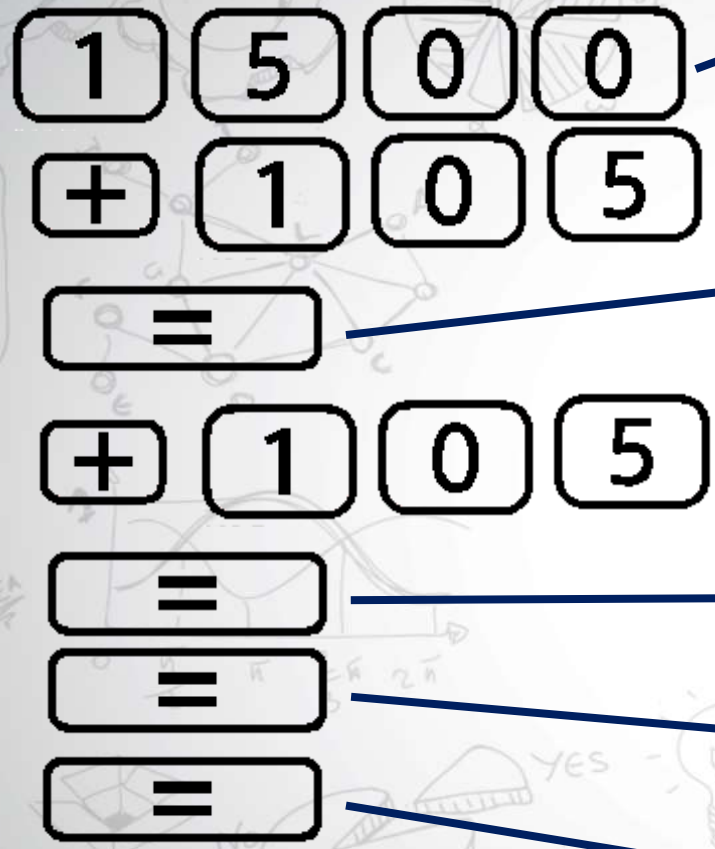
Calculating Simple Interest Manually

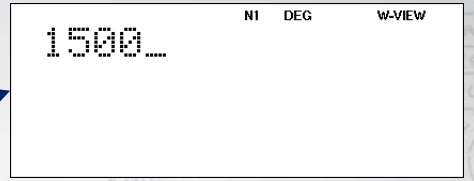
- We start with the amount given (e.g. R1500) and work out the percentage of that amount (e.g. 7%)
- Press 1 5 0 0

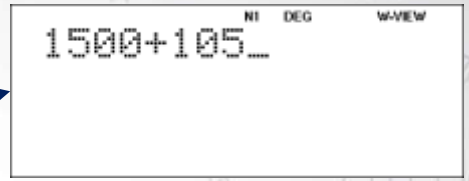


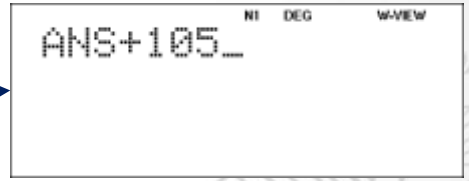


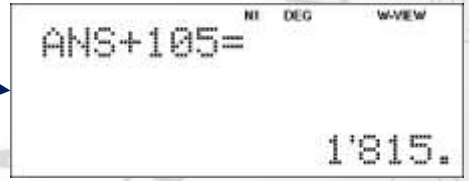
- Then we add this amount to our initial amount





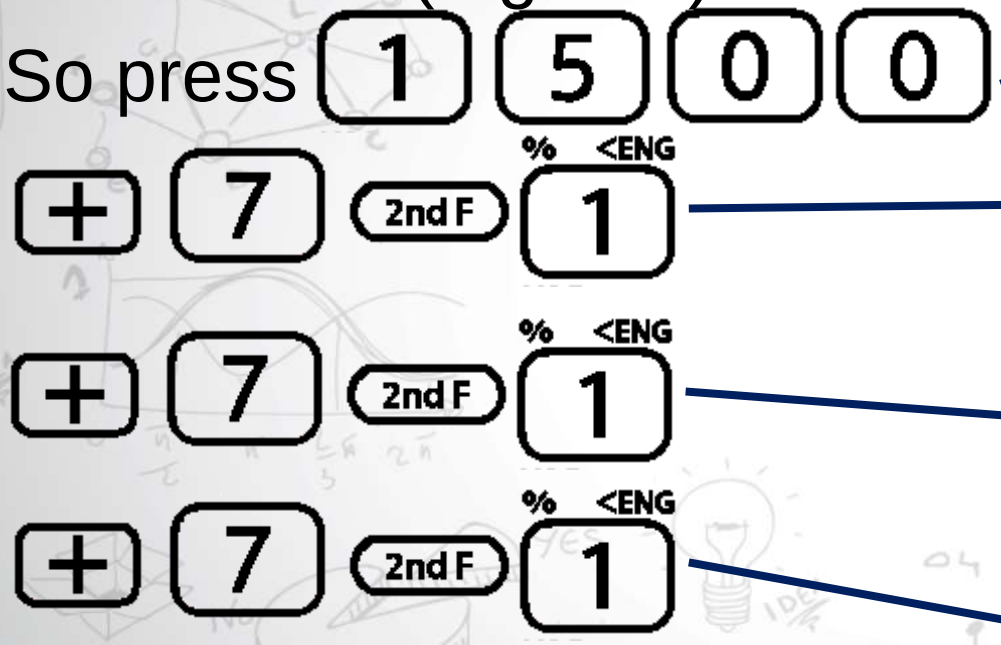


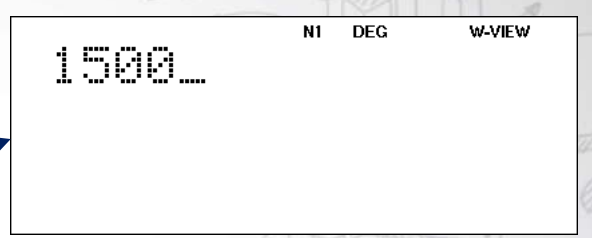


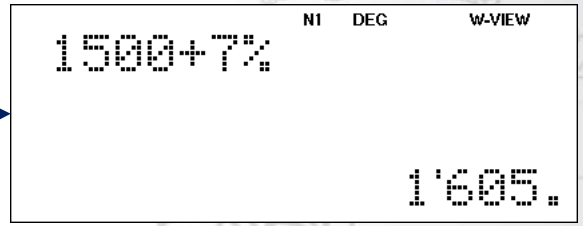


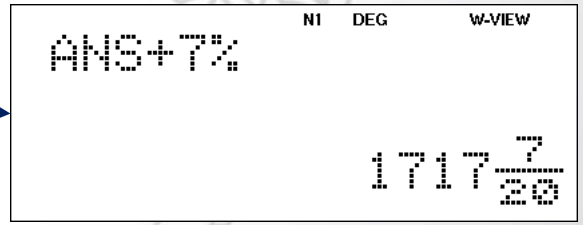
Calculating Compound Interest Manually

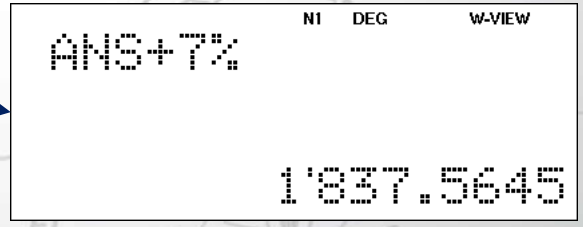
- We take the initial amount (e.g. R1500) and add our interest to it (e.g. 7%)
- So press







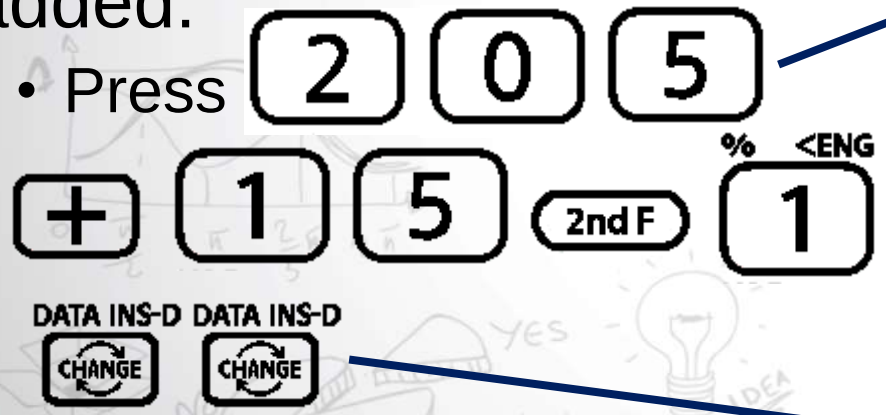


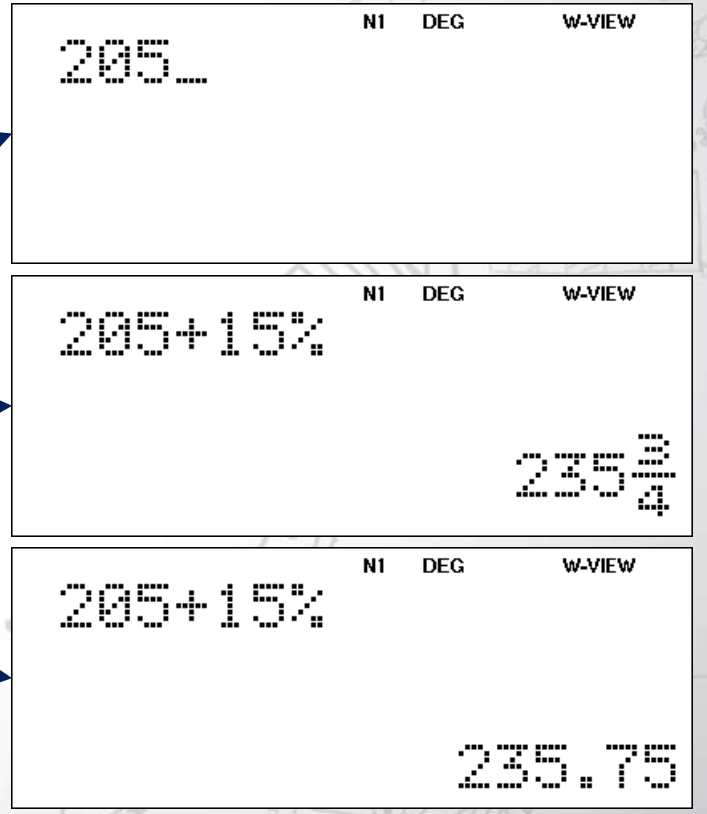


VAT

- Value Added Tax
- In SA = 15%

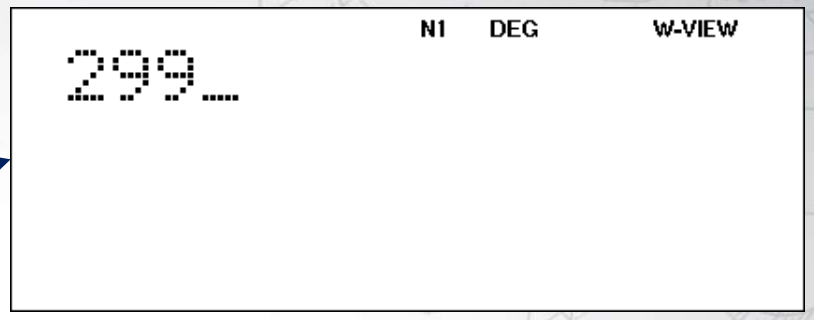
- Finding a value after vat is added:
  - Press





Finding the value before Vat was added

- Final price is R299
- Press 2 9 9



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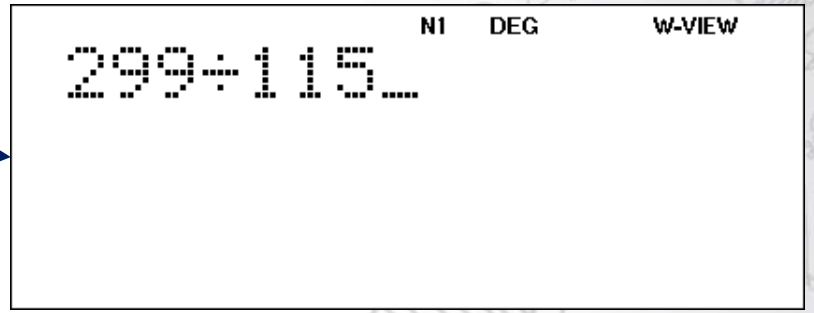
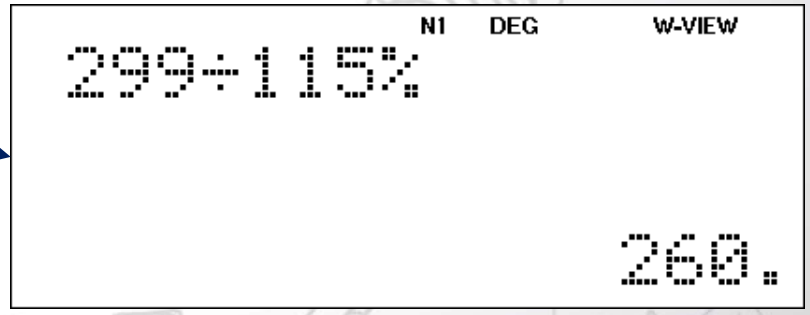
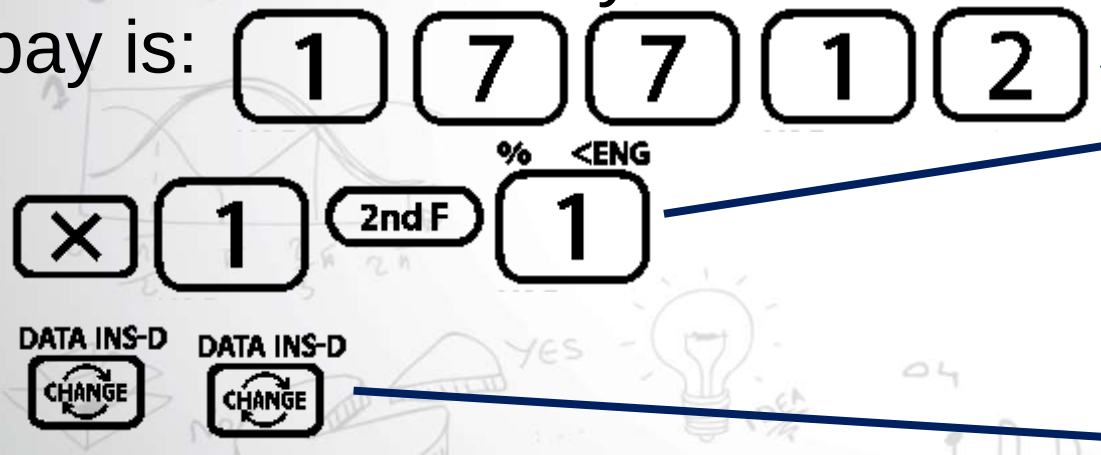


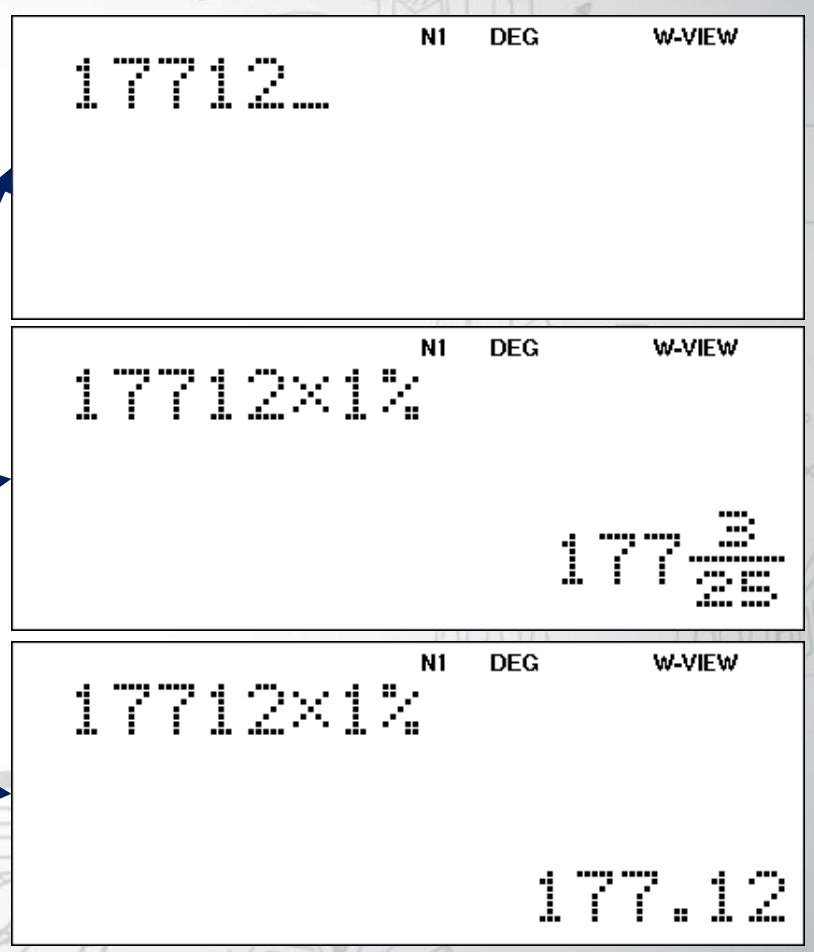
% <ENG
2nd F 1



UIF

- You pay 1% of your salary, up to a ceiling of R17 712, and your employer also contributes 1%.
- Maximum amount you would pay is:



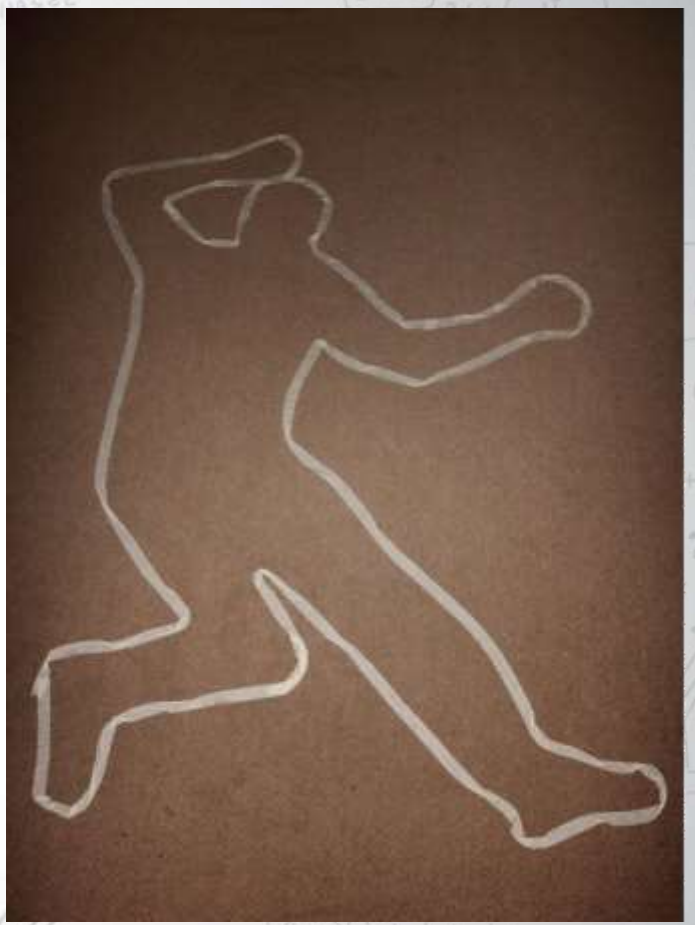


Measurement

Grade 10

What they need to know

- What is perimeter, area and volume?
  - Great exercise – the dead body
  - For Rectangles, triangles and circles
  - Formulae are given
  - In grade 10, focus on 2D shapes.
- Basics worksheet practice

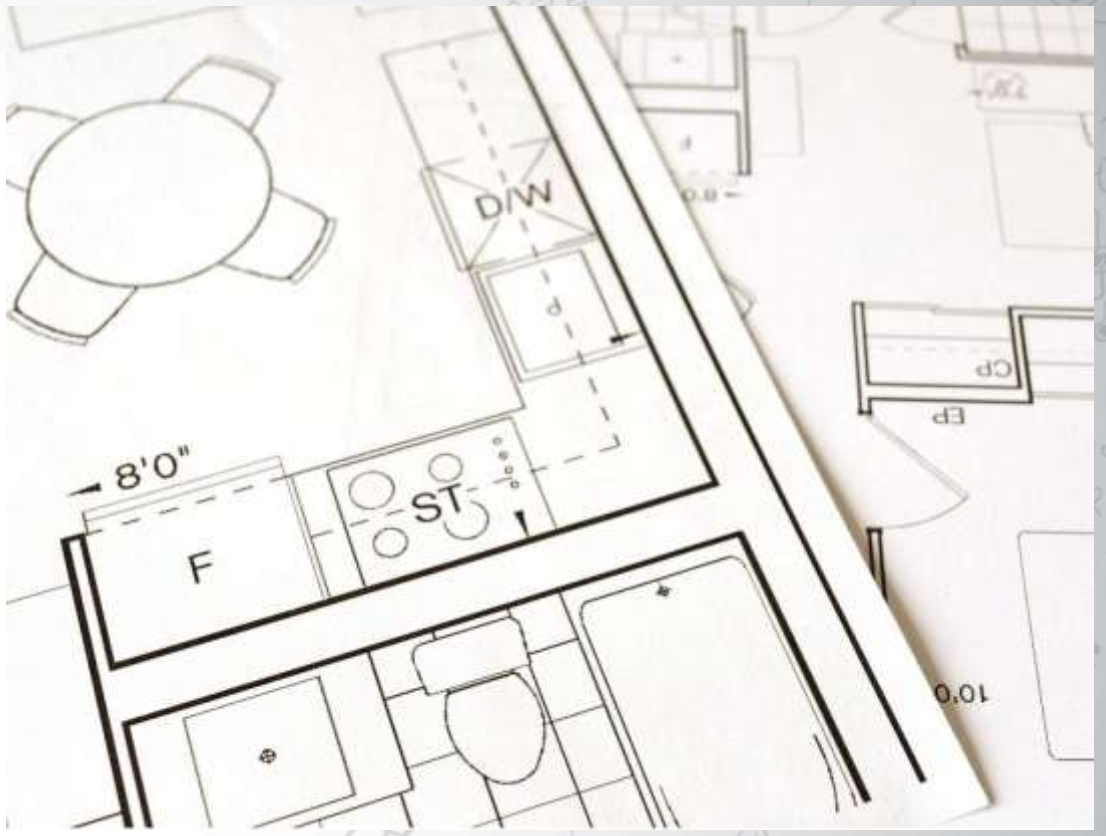


Maps, Plans and Representations

Grade 10, 11 and 12

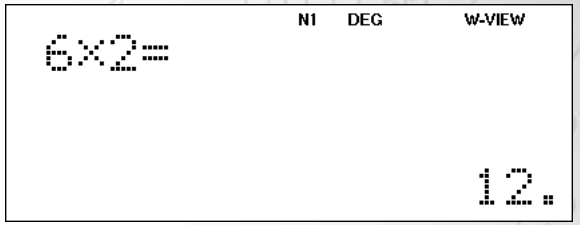
What they need to know

- Floor plans and designs
  - Design your own
- Models
  - Various Nets
  - Idea for project: Build a class town
- Scales
  - No, not the ones that make you cry ;)
  - Number scales (1: 500)
  - Bar scales
- Worksheets

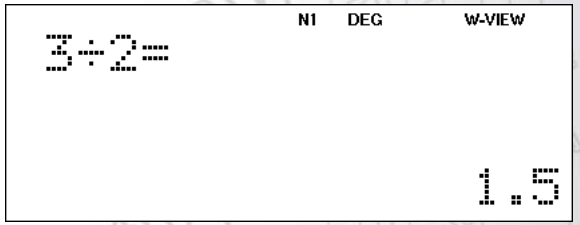


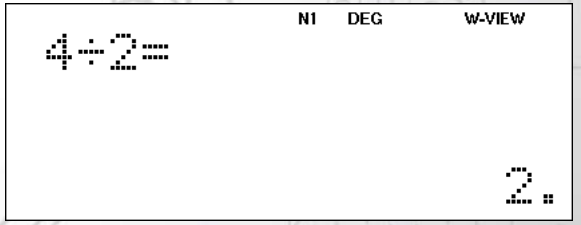
Scale

- A ratio calculation.
- E.g. map scale 1cm = 2km.
- If you measure 6cm on the map, what is the measurement in real life?



- If a park measures 3km by 4km what will its area be on the map?





Tariff Systems

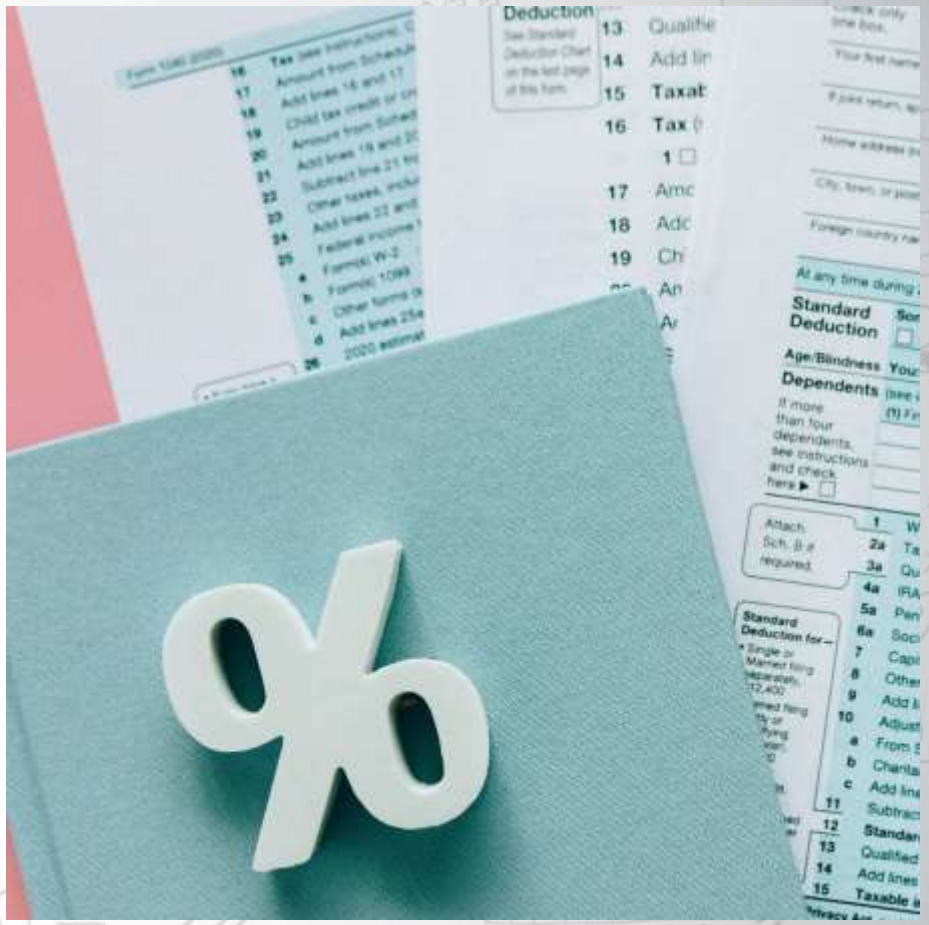
Grade 11

Investigations

Worksheets

Tariffs

- Pay attention to
  - Municipal tariffs
  - Telephone
  - Transport
  - Bank fees
- Calculations
- Drawing graphs



Example

Jack and Jill are best friends and their birthdays are one day apart so they decide to host their 18th birthday party together. They get two quotes for the catering for the party and they want to compare the quotes to decide which option is more cost effective.

OPTION 1 – R 135.00 per head for catering, which includes the cost of the venue, but excludes the VAT.

OPTION 2 – R 6000.00 for the hire of the venue and R 90 per head for catering, which includes VAT.

a) Calculate the total cost of each option, assuming they invite 120 guests to the party. Based on your calculations, which catering option should Jack and Jill choose?

b) Jack and Jill choose Option 2 and then they decide to invite another 40 people to their party, the catering company has said that they will offer a 15% discount on the total cost of their party if the total exceeds R 18 500. Do they qualify for this discount? If so, what is the total amount that they pay for the party?

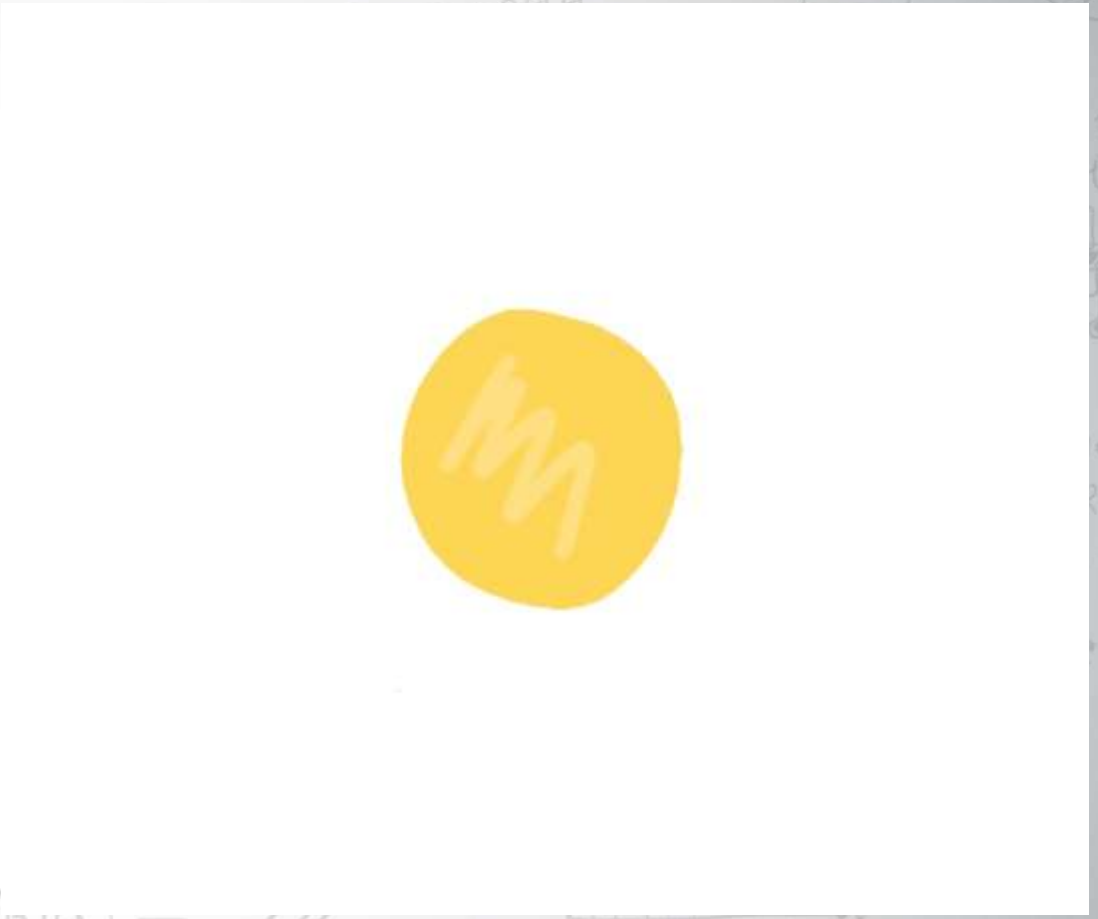
Probability

Grade 11 and 12

Worksheets

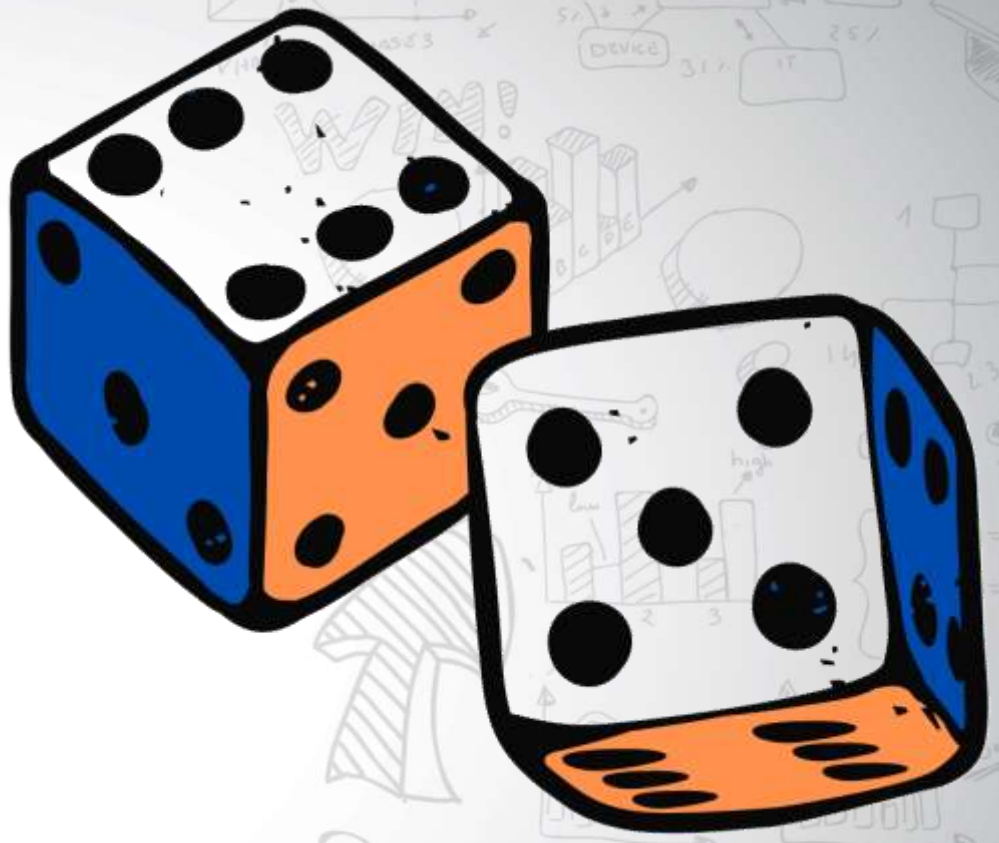
Theory

- Outcome
  - The result of a single experiment or event
- Event
  - The experiment or thing that we are observing
- Probability Scale
  - The measure of how likely (what chance) an event will occur.



Basics

- Relative frequency
  - How many times a specific result occurs in an experiment divided by the total number of experiments
  - Real life
- Theoretical probability
  - The possible number of outcomes we expect based on the information we have about the experiment

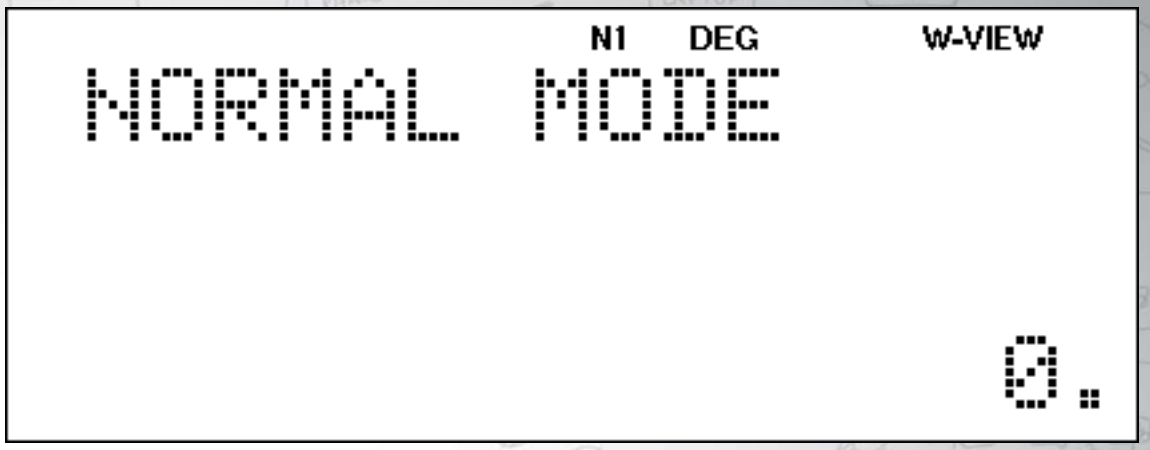


Dependent and Independent Events

- Independent Events
  - The occurrence of one event has no effect on the occurrence of another event.
  - P(A and B) = P(A) x P(B)
- Dependent Events
  - One event depends on the other to occur.
- Drawing marbles from a bag:
  - Putting it back = independent
  - Keeping it = dependent

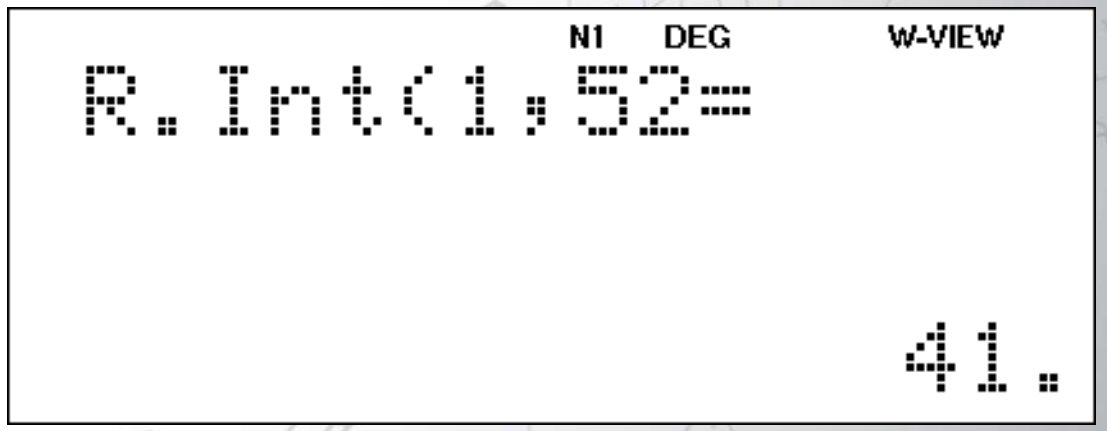
Probability

- Press HOME
- The random function:
- Press 2nd F 7
  - 0: Random
    - Random decimals between 0 and 1 to 3 decimal places
  - 1: R.Dice
    - Random numbers between 1 and 6
  - 2: R.Coin
    - Heads and Tails displayed as 0 or 1
  - R.Int(
    - Random whole number between any two numbers given



Some random things to do

- Create tally tables
- Create a poll on zoom
- My favourite is the lottery
  - Which you could do through the chat function so no cheating happens ☺



Two way Contingency Table

- A way to represent 2 or more categorical variables
- Mutually exclusive groups
- Who did better – men or women?

	Men	Women	Total
# of people who got more than 50	99	226	325
# of people who got less than 50	96	79	175
Total	195	305	500

Thank you for your valuable time!

Free worksheets and simulator:

www.mathsatsharp.co.za